The Corps

of

Royal Canadian Electrical and Mechanical Engineers

RCEME Trades 1944-2020

A Reference Guide

Trade Specifications

Volume 10 - Radio and Telecommunication Trades

The RCEME Heritage Archives

RCEME Trades 1944-2020

A Reference Guide

Trade Specifications

Volume 10 - Radio and Telecommunication Trades

Contents of this Volume

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Radio Technician Group 2, 1955

Introduction

RCEME Trades 1944-2020, A Reference Guide summarizes the trades that were part of RCEME when the Corps was formed in 1944, and follows the development, amalgamations, changes, and history from that time to the four trades that are part of RCEME today. During the research for that document, many trades specifications and standards were found in the Library and Archives Canada (LAC) and other repositories. These were used to prepare a thumbnail history of each trade in the main reference, but space precluded the inclusion of the complete trade specification and/ or standard.

This “Trades Specifications” series supports the main document and includes the original trade specifications and references as they were found at the LAC and elsewhere. This is a source document for researchers. In general, the raw photographs of the LAC file pages have been converted to a searchable , file. No attempt has been made to reformat the contents of the original files.

Guide to the Series

Because of the size of some of the files, the trades have been separated into several volumes, each containing the specifications for a group of trades. The series consists of:

Volume 1 - Aircraft Trades

Volume 2 - Armourer, Armament, and Weapons Technician Trades

Volume 3 - Body and Tire Repair Trades

Volume 4 - Driver and Driver Mechanic Trades

Volume 5 - Electrical Trades

Volume 6 - Instructor Trades

Volume 7 - Instrument Trades

Volume 8 - Metals, Machinist, and Welding Trades

Volume 9 - Radar and Fire Control System (1950s) Trades

Volume 10 - Radio and Telecommunication Trades

Volume 11 - Recovery Mechanic Trades

Volume 12 - Vehicle Repair Trades

Volume 13 - Other Trades

Volume 14 - Trade Reviews

Volume 15 - Post-Unification Trades

Volume 16 - RCEME Trades in 2020

Source Documents

This is a supporting reference for *RCEME Trades 1944-2020, A Reference Guide*. The list of sources for the main document is reproduced below. Where possible, the source document (or a relevant excerpt) has been scanned and placed on the RCEME Historical Database. Sometimes, a copy may be on the Internet Archive. One location of the primary document is included - there may be other copies in existence.

Primary sources include:

Instructions Regarding Trades Tests and Tradesmen's Rates of Pay, Canadian Army (Overseas), 1943. A copy is available in the Canadian War Museum under the call reference UB 337 I57 CWM Ref Tech 1943. Short reference in this document: [Trades 1943]. This document does not relate trades to a specific Corps. The relationship to RCOC(E) and later RCEME is inferred.

Instructions Regarding Trades Tests and Trades Testing, Canadian Army, 1944. Queens Printer, 1944. A copy is available in the Canadian War Museum under the call reference UB 337 C2 I5 CWM Ref Tech 1944. Short reference in this document: [Trades 1944]. This reference had two major amendments: AL 1 dated 1 January 1945, and AL 2 (not dated), both included in the reference. This reference relates to the Canadian Army as a whole, and not just the Canadian Army Overseas. The assignment of trades to Corps includes RCEME, which is evidence that it was updated after the formation of CEME/RCEME.

Canadian Army Routine Order (CARO) No. 4230 dated 15 March 1944. The Annexes to this CARO (and subsequent CAROs that amended CARO 4230) detailed the units and trades that were to be transferred to the new Corps of RCEME. The Canadian War Museum has a set of CARO.

Canadian Army Routine Order No. 6579 dated 20 May 1946. This was the first major postwar regrouping of Army trades and classification of tradesmen. A copy is available in the Canadian War Museum under the call reference Ref Tech Folio UB 505 C2 A7. Short reference in this document: [CARO 6579 (1946)].

Canadian Army Order No. 269-1 dated 8 April 1947. This order amplified and clarified[CARO 6579 (1946)] and is part of the new Canadian Army Orders series that replaced the Canadian Army Routine Orders in 1947. A copy is available in the Canadian War Museum under the call reference Ref Tech UB 507 A6 S8. It also announced that a new publication "Canadian Army Trades Tests 1946" would be issued, (which has not been found). Short reference in this document: [CAO 269-1 (1947)].

Canadian Army Order No. 269-1 dated 22 August 1949. Trades Designations, Groupings of Trades, Responsibility for Training and Corps Affiliation. This replaced and updated [CAO 269-1 (1947)]. It also assigned trades to specific Corps. A copy is available in the Canadian War Museum under the call reference Ref Tech UB 507 A6 S8. Short reference in this document: [CAO 269-1 (1949)]. This reference was amended in CAO 269-1 dated 6 February 1950, which is included as part of this source.

Canadian Army Order No. 269-1 dated 27 November 1950. Trades Designations, Groupings of Trades, Responsibility for Training and Corps Affiliation. This replaced and updated [CAO 269-1 (1949)]. A copy is available in the Canadian War

Museum under the call reference Ref Tech UB 507 A6 S8. Short reference in this document: [CAO 269-1 (1950)].

Canadian Army Order No. 269-1 dated 5 May 1952. Trades Designations, Groupings of Trades, Responsibility for Training and Corps Affiliation. This replaced and updated [CAO 269-1 (1950)]. A copy is available in the Canadian War Museum under the call reference Ref Tech UB 507 A6 S8. Short reference in this document: [CAO 269-1 (1952)].

There would appear to have been an update to CAO 269-1 in 1954, but the CWM does not have a copy of that CAO - DHH might.

Canadian Army Manual of Trades and Specialties. This detailed the Canadian Army trade standards and specifications and replaced the Canadian Army Trades Tests series. The manual seems to have come into effect by CAO 225-52 dated 18 November 1957. There is apparently no CAO 269-1 after that date. The RCEME trades extracted from this document are dated in the late 1950s and early 1960s. A copy is available in the Canadian War Museum under the call reference Ref Tech UB 337 C2 C3 n.d. This reference is not complete. A complete version may exist at DHH (apparently not). Short reference in this document: [CAMTS].

Files in the Library and Archives, Canada (LAC). There are files in the LAC on many of the RCEME trades in the 1950s and early 1960s. These files have been reviewed and the specific file reference is contained in Annex A for the specific trade in question. See also the Army Trades Committee paragraph below. Short reference in this document: [LAC - file reference].

A specific file at the LAC is RG24-C-1-a, Volume 2165, File HQS-54-27-35-320, Trades Training & Tests - RCEME - Policy 1944-1947. It is not complete, but provides documentary evidence of the DEME position on the creation and elimination of some trades. Where other official confirmation has not been found (e.g. in the Army Trades Committee files), this file has been accepted as an authority. Short reference in this document: [LAC - Policy - Training of Tradesmen, RCEME]

Army Trades Committee and Army Trades Committee Sub-committee files at the LAC. A specific series of files at the LAC are the minutes of the Army Trades Committee and Army Trades Committee Sub-committee from about 1950 to 1965. They are best located by using the LAC search engine. The minutes give the approval (and date) for trade actions, and are often accompanied by supporting documentation such as trades specifications. Short reference in this document: [LAC - ATC and LAC - ATCSC]. The Directorate of History and Heritage also has a copy of some of these files. Between DHH and the LAC, there should be a complete set.

Files in the RCEME Archives. The RCEME archives, currently located at the RCEME School, have a few trades files. Most date from the early 1960s. There is a separate list ing of all the files in the RCEME archives. Short reference in this document: [RCEME Archives].

Bennett, Thomas J. **Skill at Arms, A History of Canadian Army Trades including their Badges and Parachute Wings**. Bunker to Bunker Books, Calgary, AB, 2005. The book appears to be out of print. A copy is in the Canadian War Museum Library under the call number UC 535 C3 B458 2005. Short reference in this document: [Skill at Arms]. It is an outstanding reference work, and was used heavily in the creation of the first draft of this document. However, unfortunately it does not link to primary

sources, and has been replaced as a source document as primary sources become available. That said, few discrepancies have been found, and I have full confidence in this book as a source. It was my primary reference for relating the badges worn by the trades.

RCEME Historical Database. Documents of general and specific interest to RCEME have been placed on a Google drive, part of which is shared with the public. All files in the public section of the database can be downloaded. The database can be accessed through the history and heritage tab on the Corps of RCEME website. Supporting documentation is in the RCEME Complete Digital Archives on the same Google Drive. The supporting documentation (such as the raw document scans) is not available to the general public, but can be requested from the RCEME Historian if required. Short reference in this document: [RCEME Historical Database].

RCEME Trades Source Documents at the LAC (Postwar and Pre-Unification)

The following Policy of Training and Qualifications files have been located at the LAC. All files have been reviewed and relevant details, including trades specifications, have been photographed and a pdf file of the information has been created and placed on the RCEME Historical Database. In general, the information contained in the files is limited to a copy of the draft trades standard. It is a disappointing source, but provides an index to the trades that were in existence.

Policy of Training and Qualifications - Artificers 1951-1961. [LAC Reference: RG24-C-1-c, Volume/box number 31348, File number 3202-A15.]

Policy of Training and Qualifications - Body Repairman 1952-1959. [LAC Reference: RG24-C-1-c, Volume/box number 31348, File number 3202-B22.]

Policy of Training and Qualifications - Driver Mechanics (Wheeled) 1956-1958. [LAC Reference: RG24-C-1-c, Volume/box number 31349, File number 3202-D22/2.]

Policy of Training and Qualifications - Driver Mechanics (Tracked) 1950-1956. [LAC Reference: RG24-C-1-c, Volume/box number 31349, File number 3202-D22/1.]

Policy of Training and Qualifications - Electrical Mechanic 1955-1960. [LAC Reference: RG24-C-1-c, Volume/box number 31362, File number 3202-E14.]

Policy of Training and Qualifications - Fire Control System Technician (AA) 1955-1959. [LAC Reference: RG24-C-1-c, Volume/box number 31362, File number 3202-F9.]

Policy of Training and Qualifications - Fitters 1949-1950. [LAC Reference: RG24-C-1-c, Volume/box number 31362, File number 3202-F18.]

Policy of Training and Qualifications - Instructors (RCEME) 1950-1955. [LAC Reference: RG24-C-1-c, Volume/box number 31363, File number 3202-J2/7.]

Policy of Training and Qualifications - Instrument Technician 1950-1959. [LAC Reference: RG24-C-1-c, Volume/box number 31362, File number 3202-J11.]

Policy of Training and Qualifications - Machinist Fitter 1951-1962. [LAC Reference: RG24-C-1-c, Volume/box number 31363, File number 3202-M2/1.]

Policy of Training and Qualifications - Machinist (Metal) 1946-1965. [LAC Reference: RG24-E-1-c, Volume/box number 32842, File number 450-M1. RCAF file.]

Policy of Training and Qualifications - Master Vehicle Technicians 1954-1958. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-V8/M.]

Policy of Training and Qualifications - Master Weapons Technician 1955-1958. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-W8/M.]

Policy of Training and Qualifications - Projectionist Clerk. [LAC Reference: RG24-C-1-c, Volume/box number 31368, File number 3202-P49.]

Policy of Training and Qualifications - Radar Technician 1951-1954. [LAC Reference: RG24-C-1-c, Volume/box number 31368, File number 3202-R3.]

Policy of Training and Qualifications - Radio Technician 1955-1960. [LAC Reference: RG24-C-1-c, Volume/box number 31368, File number 3202-R12.]

Policy of Training and Qualifications - Recovery Mechanic 1953-1954. [LAC Reference: RG24-C-1-c, Volume/box number 31368, File number 3202-R11.]

Policy of Training and Qualifications - Tire Repairman 1952-1954. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-T18.]

Policy of Training and Qualifications - Typewriter Mechanics 1952-1956. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-T30.]

Policy of Training and Qualifications - Vehicle Mechanics 1950-1961. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-V6.]

Policy of Training and Qualifications - Vehicle Mechanics 1961-1963. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-V6.]

Policy of Training and Qualifications - Watchmaker 1952-1956. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-W4.]

Policy of Training and Qualifications - Weapons Technician 1954-1958. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-W8.]

Policy of Training and Qualifications - Welders 1952-1956. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-W6.]

Telecommunication Mechanic (Field)
Groups 1 & 2 & 3, 1950

FILE NUMBER 1200-T3-1 VOL. 1

C R 117
100M-12-49 (2973)
HQ 200-115-CR 117

DEPARTMENT OF NATIONAL DEFENCE ARMY

SUB-COMMITTEE OF THE

ARMY TRADES COMMITTEE

DEAD

DEAD

FOR CROSS REFERENCES SEE INSIDE COVER

REFERRED	FOR REMARKS	DATE OF PASS	INITIALS	DATE OF P.A.	INITIALS	DATE OF B.F.	CENTRAL REGISTRY	INSPECTED IN C.R. BY
D Mt	NEW FILE CR NOV 2 5 1950			5 Dec 52			MAR 6 1952	

VOL. 1

FILE NUMBER 1200-T3-1

ARMY HEADQUARTERS

HQ 173-2-3 Vol 2 (Trg 2)

OTTAWA, 13 MAY 50.

MINUTES OF THE 15TH MEETING OF THE SUB-COMMITTEE OF THE ARMY TRADES COMMITTEE HELD IN ROOM 3533, "A" BUILDING, THURSDAY, 11 MAY 50, AT 1400 HOURS

1 The following trades were discussed:

(a) Telecommunication Mechanic (L of C) Groups 1, 2 and 3

The introduction of this trade sponsored by DME was discussed and approved by the Sub-Committee. The trade specification was approved with minor amendments.

Action: DME to prepare twenty copies of amended trade specification for submission to the Army Trades Committee.

(b) Telecommunication Mechanic (Field), Groups 1, 2 and 3

The introduction of this trade sponsored by DME was discussed and approved by the Sub-Committee. The trade specification was approved with minor amendments.

Action: DME to prepare twenty copies of amended trade specification for submission to the Army Trades Committee.

(c) Telecommunication Mechanic (Radar), Groups 1, 2 and 3

The introduction of this trade sponsored by DME was discussed and approved by the Sub-Committee. The trade specification was approved with minor amendments.

Action: DME to prepare twenty copies of amended trade specification for submission to the Army Trades Committee.

(K.H. McKibbin) Lt-Col
Chairman
Sub-Committee of the Army Trades Committee

DHP/4308/pc

DISTRIBUTION

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Appendix 'B'

Effective

SPECIFICATION OF THE TRADE

TELECOMMUNICATION MECHANIC (FIELD) GROUPS 1, 2 AND 3

JOB DESCRIPTION

1 Inspects, adjusts, tests, installs, modifies, repairs or overhauls all types of field telecommunication and electronic equipment (~~see note 1~~) excluding radar equipment.

2 Identifies, tests, removes, repairs or rebuilds, and replaces circuit components.

3 Maintains lead acid types of portable secondary batteries.

4 Uses and understands the limitation of the hand tools, machine tools, and test equipment applicable to his trade group.

5 Operates and maintains motor generator sets used to supply power to mobile Tels workshops and equipment.

GENERAL BREAKDOWN OF TRADE

Serial	Function
1	Use and care of tools
2	Use and care of test equipment
3	Operation and maintenance of generating equipment
4	Maintenance of portable secondary batteries
5	Ancillary equipments and components
6	Field line equipment (non-electronic)
7	Field AM wireless equipment
8	Publications
9	Field electronic line equipment
10	Field FM wireless equipment
11	Miscellaneous field electronic equipment
12	Planning and estimating.

Detailed breakdown of each function included at Annexure 1.

QUALIFICATION FOR GROUP 1

6 The candidate must successfully pass a course for Telecommunication Mechanic (Field) as authorized by Army Headquarters.

7 Duration - 360 hours

8 Scope of Course - The candidate will be taught:

(a) the elements of electricity and electronics applicable to the equipments covered by functions 1 - 7 inclusive;

(b) the principles of fault finding, testing and repairing equipment and components covered by functions 1 - 7 inclusive;

(c) the use and care of tools and test equipment;

(d) the operation and maintenance of generating equipment;

(e) the maintenance of storage batteries;

(f) safety precautions, first aid and resuscitation.

The use of mathematics will be limited to simple algebra and a few principles of trigonometry. The textbooks Elements of Radio by A. Marcus and Wm. Marcus (Second Edition) and Elements of Radio Servicing by Marcus and Levy will be used to indicate the depth of knowledge to be taught the candidate.

QUALIFICATION FOR GROUP 2

~~10~~ 9 The candidate must be certified as being proficient by the Commanding Officer with advice from Technical officers or assessors when deemed appropriate in functions 1 to 8 shown in the General Breakdown of the Trade.

QUALIFICATION FOR GROUP 3

~~10~~ The candidate must successfully pass a course for Telecommunication Mechanic (Field) Group 3 as authorized by Army Headquarters or be certified as being proficient in functions 9 to 12. Certification of proficiency in lieu of course must be approved by AHQ.

~~11~~ Duration - 480 hours.

~~12~~ Scope of Course - The candidate will be taught:

(a) the elements of electronics and the circuitry applicable to the equipments covered by functions 9 to ~~12~~;

(b) the principles of fault finding, testing and repairing the equipment and components covered by functions 9 to ~~12~~.

The textbook Basic Radio by Hoag will be used to indicate the depth of knowledge to be taught the candidate.

NOTE 1 - For the purposes of this trade specification the following types of equipment will be considered field telecommunication equipment:

(a) Portable line equipment such as telephone sets, fullerphones, switchboards, repeaters, carrier apparatus and associated equipment.

(b) Portable and mobile wireless equipment such as transmitter-receivers, communication receivers and transmitters of 300 W output or less.

(c) Miscellaneous portable electronic equipment such as mine detectors, public address systems and Geiger counters.

TELECOMMUNICATION MECHANIC (FIELD)

ANNEXURE 1

1 Use and care of tools

(a) Chest tool filled Telecommunication
(b) Forming simple small sheet metal parts
(c) Working with plastics and other insulating materials
(d) Bench grinder - grinding of tool bits and sharpening of twist drills etc.
(e) Hand drill, portable electric drill, drill press
(f) Soldering, splicing and insulating.

2 Use and care of test equipment

(a) Test sets multirange (non-electronic)
(b) Test sets multirange (electronic)
(c) Test sets valve
(d) Oscillographs
(e) Calibrators crystal
(f) Wavemeters and frequency meters
(g) Bridges capacity and resistance
(h) Bridges impedance
(j) Generators, signal (RF and audio)
(k) Meters output.

3 Operation and maintenance of generating equipment

(a) Operation (starting and stopping)
(b) Frequency and voltage adjustment
(c) Preventive maintenance.

4 Maintenance of portable secondary batteries

(a) Charging equipment (selenium rectifier, tungar, DC charging sets) and their maintenance
(b) Battery room practices such as mixing electrolyte and safety precautions
(c) Charging methods
(d) Hydrometer
(e) Cell testing voltmeter
(f) High rate discharge tester.

5 Ancillary equipments and components

(a) Identification
(b) Testing
(c) Adjustment and repair.

6 Field line equipment (non-electronic)

(a) Inspection and specification testing
(b) Adjustment and repair
(c) Removal and replacement of components.

7 Field AM wireless equipment

(a) Inspection and specification testing
(b) Repair, adjustment and alignment
(c) Removal and replacement of components.

8 Publications

(a) Locating information in CAMEIs
(b) Locating information in civilian technical handbooks.

Field electronic line equipment

(a) Inspection and specification testing
(b) Adjustment and repair
(c) Removal and replacement of components.

10 Field FM wireless equipment

(a) Inspection and specification testing
(b) Adjustment and alignment
(c) Removal and replacement of components.

11 Miscellaneous field electronic equipment such as Mine detectors or PA equipment or Geiger counters

(a) Inspection and specification testing
(b) Adjustment
(c) Removal and replacement of components.

12 Planning and estimating

(a) Planning work
(b) Estimating materials and parts
(c) Estimating time and cost.

Telecommunication Mechanic (Line of Communications) Groups 1 & 2 & 3, 1950

FILE NUMBER 1200-T3-1 VOL. 1

C R 117
100M-12-49 (2973)
HQ 200-115-CR 117

DEPARTMENT OF NATIONAL DEFENCE ARMY

SUB-COMMITTEE OF THE

ARMY TRADES COMMITTEE

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FOR CROSS REFERENCES SEE INSIDE COVER

REFERRED	FOR REMARKS	DATE OF PASS	INITIALS	DATE OF P.A.	INITIALS	DATE OF B.F.	CENTRAL REGISTRY	INSPECTED IN C.R. BY
D Mt	NEW FILE CR NOV 2 5 1950			5 Dec 52			MAR 6 1952	

VOL. 1

FILE NUMBER 1200-T3-1

ARMY HEADQUARTERS

HQ 173-2-3 Vol 2 (Trg 2)

OTTAWA, 13 MAY 50.

MINUTES OF THE 15TH MEETING OF THE SUB-COMMITTEE OF THE ARMY TRADES COMMITTEE HELD IN ROOM 3533, "A" BUILDING, THURSDAY, 11 MAY 50, AT 1400 HOURS

1 The following trades were discussed:

(a) Telecommunication Mechanic (L of C) Groups 1, 2 and 3

The introduction of this trade sponsored by DME was discussed and approved by the Sub-Committee. The trade specification was approved with minor amendments.

Action: DME to prepare twenty copies of amended trade specification for submission to the Army Trades Committee.

(b) Telecommunication Mechanic (Field), Groups 1, 2 and 3

The introduction of this trade sponsored by DME was discussed and approved by the Sub-Committee. The trade specification was approved with minor amendments.

Action: DME to prepare twenty copies of amended trade specification for submission to the Army Trades Committee.

(c) Telecommunication Mechanic (Radar), Groups 1, 2 and 3

The introduction of this trade sponsored by DME was discussed and approved by the Sub-Committee. The trade specification was approved with minor amendments.

Action: DME to prepare twenty copies of amended trade specification for submission to the Army Trades Committee.

(K.H. McKibbin) Lt-Col
Chairman
Sub-Committee of the Army Trades Committee

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DISTRIBUTION

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Appendix 'A'

Effective

SPECIFICATION OF THE TRADE

TELECOMMUNICATION MECHANIC (L OF C) GROUPS 1, 2 AND 3

JOB DESCRIPTION

1 Inspects, adjusts, tests, installs, modifies, repairs or overhauls all types of L of C telecommunication and electronic equipment (~~see note~~ 1) excluding radar equipment.

2 Identifies, tests, removes, repairs or rebuilds, and replaces circuit components.

3 Maintains lead acid types of portable secondary batteries.

4 Uses and understands the limitation of the hand tools, machine tools, and test equipment applicable to his trade group.

5 Operates and maintains motor generator sets used to supply power to mobile Tels workshops and equipment.

6

GENERAL BREAKDOWN OF TRADE

Serial	Function
1	Use and care of tools
2	Use and care of test equipment
3	Operation and maintenance of generating equipment
4	Maintenance of portable secondary batteries
5	Ancillary equipments and components
6	L of C line equipment (non-electronic and excluding teletype equipment)
7	L of C AM wireless equipment
8	Publications
9	L of C electronic line equipment
10	L of C wireless equipment (other than AM equipment)
11	Teletype equipment
12	Planning and estimating.

Detailed breakdown of each function included at Annexure 1.

QUALIFICATION FOR GROUP 1

7 ~~6~~ The candidate must successfully pass a course for Telecommunication Mechanic (Field) as authorized by Army Headquarters.

8 ~~7~~ Duration - 360 hours.

9 ~~8~~ Scope of Course - The candidate will be taught:

(a) the elements of electricity and electronics applicable to the equipments covered by functions 1 - 7 inclusive;

(b) the principles of fault finding, testing and repairing equipment and components covered by functions 1 - 7 inclusive;

(c) the use and care of tools and test equipment;

(d) the operation and maintenance of generating equipment.

(e) the maintenance of storage batteries;

(f) safety precautions, first aid and resuscitation.

The use of mathematics will be limited to simple algebra and a few principles of trigonometry. The textbooks Elements of Radio by A. Marcus and Wm. Marcus (Second Edition) and Elements of Radio Servicing by Marcus and Levy will be used to indicate the depth of knowledge to be taught the candidate.

QUALIFICATION FOR GROUP 2

10 ~~9~~ The candidate must be certified as being proficient by the Commanding Officer with advice from Technical officers or assessors when deemed appropriate in functions 1 to 8 shown in the General Breakdown of the Trade.

QUALIFICATION FOR GROUP 3

11 ~~10~~ The candidate must successfully pass a course for Telecommunication Mechanic (L of C) Group 3 as authorized by Army Headquarters or he must be certified as being proficient in functions 9 to 12. Certification in lieu of course must be approved by AHQ.

12 ~~N~~ Duration - 600 hours.

~~12~~ Scope of Course - The candidate will be taught:

13 (a) the elements of electronics and the circuitry applicable to the equipments covered by functions 8, 9 and 10;||

(b) the principles of fault finding, testing and repairing the equipment and components covered by function 8, 9 and 10.||

The textbook Basic Radio by Hoag will be used to indicate the depth of knowledge to be taught the candidate.

6 NOTE 1 - (c) For the purposes of this trade specification the following types of equipment will be considered L of C telecommunication equipment:

(a) Line equipment normally employed in a static role.

(b) Communication receivers and associated equipments.

(c) Transmitters of 300 W output or greater and associated equipments.

(d) Teletype equipment.

TELECOMMUNICATION MECHANIC (L OF C)

ANNEXURE 1

Use and care of tools

(a) Chest tool filled Telecommunication
(b) Forming simple small sheet metal parts
(c) Working with plastics and other insulating materials
(d) Bench grinder - grinding of tool bits and sharpening of twist drills etc.
(e) Hand drill, portable electric drill and drill press
(f) Soldering, splicing and insulating.

2 Use and care of test equipment

(a) Test sets multirange (non-electronic)
(b) Test sets multirange (electronic)
(c) Test sets valve
(d) Oscillographs
(e) Calibrators crystal
(f) Wavemeters and frequency meters
(g) Bridges capacity and resistance
(h) Bridges impedance
(j) Generators, signal (RF and audio)
(k) Meters output.

3 Operation and maintenance of generating equipment

(a) Operation (starting and stopping)
(b) Frequency and voltage adjustment
(c) Preventive maintenance.

4 Maintenance of portable secondary batteries

(a) Charging equipment (selenium rectifier, tungar, DC charging sets) and their maintenance
(b) Battery room practices such as mixing electrolyte and safety precautions
(c) Charging methods
(d) Hydrometer
(e) Cell testing voltmeter
(f) High rate discharge tester.

5 Ancillary equipments and components

(a) Identification
(b) Testing
(c) Adjustment and repair.

6 L of C line equipment (non-electronic and excluding teletype equipment)

(a) Inspection and specification testing
(b) Adjustment and repair
(c) Removal and replacement of components

7 L of C AM. wireless equipment

(a) Inspection and specification testing
(b) Repair, adjustment and alignment
(c) Removal and replacement of components.

8 Publications

(a) Locating information in CAEMEIs
(b) Locating information civilian technical handbooks.

L of C electronic line equipment

(a) Inspection and specification testing
(b) Adjustment and repair
(c) Removal and replacement of components.

10 L of C wireless equipment (other than AM equipment)

(a) Inspection and specification testing
(b) Repair, adjustment and alignment
(c) Removal and replacement of components.

11 Teletype equipment

(a) Inspection and specification testing
(b) Adjustment and repair
(c) Removal and replacement of components.

12 Planning and estimating

(a) Planning work
(b) Estimating materials and parts
(c) Estimating time and cost.

Telecommunication Mechanic (Radar) Groups 1 & 2 & 3, 1950

FILE NUMBER 1200-T3-1 VOL. 1

C R 117
100M-12-49 (2973)
HQ 200-115-CR 117

DEPARTMENT OF NATIONAL DEFENCE ARMY

SUB-COMMITTEE OF THE

ARMY TRADES COMMITTEE

DEAD

DEAD

FOR CROSS REFERENCES SEE INSIDE COVER

REFERRED	FOR REMARKS	DATE OF PASS	INITIALS	DATE OF P.A.	INITIALS	DATE OF B.F.	CENTRAL REGISTRY	INSPECTED IN C.R. BY
D Mt	NEW FILE CR NOV 2 5 1950			5 Dec 52			MAR 6 1952	

VOL. 1

FILE NUMBER 1200-T3-1

ARMY HEADQUARTERS

HQ 173-2-3 Vol 2 (Trg 2)

OTTAWA, 13 MAY 50.

MINUTES OF THE 15TH MEETING OF THE SUB-COMMITTEE OF THE ARMY TRADES COMMITTEE HELD IN ROOM 3533, "A" BUILDING, THURSDAY, 11 MAY 50, AT 1400 HOURS

1 The following trades were discussed:

(a) Telecommunication Mechanic (L of C) Groups 1, 2 and 3

The introduction of this trade sponsored by DME was discussed and approved by the Sub-Committee. The trade specification was approved with minor amendments.

Action: DME to prepare twenty copies of amended trade specification for submission to the Army Trades Committee.

(b) Telecommunication Mechanic (Field), Groups 1, 2 and 3

The introduction of this trade sponsored by DME was discussed and approved by the Sub-Committee. The trade specification was approved with minor amendments.

Action: DME to prepare twenty copies of amended trade specification for submission to the Army Trades Committee.

(c) Telecommunication Mechanic (Radar), Groups 1, 2 and 3

The introduction of this trade sponsored by DME was discussed and approved by the Sub-Committee. The trade specification was approved with minor amendments.

Action: DME to prepare twenty copies of amended trade specification for submission to the Army Trades Committee.

(K.H. McKibbin) Lt-Col
Chairman
Sub-Committee of the Army Trades Committee

DHP/4308/pc

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Appendix "C"

Effective

SPECIFICATION OF THE TRADE

TELECOMMUNICATION MECHANIC (RADAR) GROUPS 1, 2 AND 3

JOB DESCRIPTION

1 Inspects, adjusts, tests, installs, modifies, repairs or overhauls all types of radar equipment.

2 Identifies, tests, removes, repairs or rebuilds, and replaces circuit components.

3 Maintains lead acid types of portable secondary batteries.

4 Uses and understands the limitation of the hand tools, machine tools, and test equipment applicable to his trade group.

5 Operates and maintains motor generator sets used to supply power to mobile Tels workshops and equipment.

GENERAL BREAKDOWN OF TRADE

Serial	Function
1	Use and care of tools
2	Use and care of test equipment
3	Operation and maintenance of generating equipment
4	Maintenance of portable secondary batteries
5	Ancillary equipment and circuit components
6	Early warning radar equipment (AA)
7	Fire control radar equipment (AA) and IFF equipment
8	Publications
9	Mechanical assemblies
10	Testing and adjustment procedures
11	CD and FA radar equipment
12	Planning and estimating.

Detailed breakdown of each function included at Annexure 1.

QUALIFICATION FOR GROUP 1

6 The candidate must successfully pass a course for Telecommunication Mechanic (Radar) as authorized by Army Headquarters.

7 Duration - 360 hours.

8 Scope of Course - The candidate will be taught:

(a) the elements of electricity and electronics applicable to the equipments covered by functions 1 - 7 inclusive;

(b) the principles of fault finding, testing and repairing equipment and components covered by functions 1 - 7 inclusive;

(c) the locating of information in CAEMEIs and civilian handbooks;

(d) the use and care of tools and test equipment;

(e) the operation and maintenance of generating equipment;

(f) the maintenance of storage batteries;

(g) safety precautions, first aid and resuscitation.

The use of mathematics will be limited to simple algebra and a few principles of trigonometry. The textbooks Elements of Radio by A. Marcus and Wm. Marcus (Second Edition), Elements of Radio Servicing by Marcus and Levy and Radar Primer by Hornung will be used to indicate the depth of knowledge to be taught the candidate.

QUALIFICATION FOR GROUP 2

9 The candidate must be certified as being proficient by the Commanding Officer with advice from Technical officers or assessors when deemed appropriate in functions 1 to 8 shown in the General Breakdown of the Trade.

QUALIFICATION FOR GROUP 3

10 The candidate must successfully pass a course for Telecommunication Mechanic (Radar) Group 3 as authorized by Army Headquarters or he must be certified as being proficient in functions 9 to 12. Certification of proficiency in lieu of course must be approved by AHQ.

11 Duration - 600 hours.

12 Scope of Course - The candidate will be taught:

(a) the elements of electronics and the circuitry applicable to the equipments covered by functions 9 to ~~12~~; \\

(b) the principles of fault finding, testing and repairing the equipment and components covered by functions 9 to ~~12~~. \\

The following textbooks will be used to indicate the depth of knowledge to be taught the candidate:

TM 11-466 Radar Electronic Fundamentals
TM 11-467 Radar System Fundamentals.

(c)

TELECOMMUNICATION MECHANIC (RADAR)

ANNEXURE 1

Use and care of tools

(a) Chest tool filled Telecommunication
(b) Forming simple small sheet metal parts
(c) Working with plastics and other insulating materials
(d) Bench grinder - grinding of tool bits and sharpening of twist drills etc.
(e) Hand drill, portable electric drill and drill press.
(f) Soldering, splicing and insulating.

2 Use and care of test equipment

(a) Test sets multirange (non-electronic)
(b) Test sets multirange (electronic)
(c) Test sets valve
(d) Oscillographs
(e) Calibrators crystal
(f) Wavemeters and frequency meters
(g) Bridges capacity and resistance
(h) Bridges impedance
(j) Generators, signal (RF and audio)
(k) Meters output.

3 Operation and maintenance of generating equipment

(a) Operation (starting and stopping)
(b) Frequency and voltage adjustment
(c) Preventive maintenance.

4 Maintenance of portable secondary batteries

(a) Charging equipment (selenium rectifier, tungar, DC charging sets) and their maintenance
(b) Battery room practices such as mixing electrolyte and safety precautions
(c) Charging methods
(d) Hydrometer
(e) Cell testing voltmeter
(f) High rate discharge tester.

5 Ancillary equipment and circuit components

(a) Identification
(b) Testing
(c) Repair and adjustment.

6 Early warning radar equipment (AA)

(a) Setting up and dismantling
(b) Periodic maintenance and adjustments
(c) Field servicing procedures.

7 Fire control radar and IFF equipment (AA)

(a) Setting up and dismantling
(b) Periodic maintenance and adjustments
(c) Field servicing procedures.

8 Publications

(a) Locating information in CAEMLIs
(b) Locating information in civilian technical handbooks.

Mechanical assemblies

(a) Removal and replacement
(b) Dismantling and reassembly
(c) Lubrication and adjustment
(d) Bench and operational checks.

10 Testing and adjustment procedures

(a) Chassis test hookups and measurements
(b) Realignment
(c) Collineation
(d) Range sensitivity.

11 CD and FA radar equipment

The candidate is required to demonstrate that he has general knowledge of CD and FA radar equipment. The "Brief Description" portion of the applicable Technical Description CARMEI (xy2) will be used to indicate the level of knowledge required.

12 Planning and estimating

(a) Planning work
(b) Estimating material and parts
(c) Estimating time and cost.

Radio, Radar,
Fire Control Technician (Anti-aircraft),
& Communication System Technician
Group 1, 1955

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

COMMUNICATION SYSTEM TECHNICIAN GROUP 1

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUP 1

RADAR TECHNICIAN GROUP 1

RADIO TECHNICIAN GROUP 1

AIM

1 To ensure that candidates are capable of carrying out the duties of a Communication System Technician Group 1, Fire Control System Technician (Anti-Aircraft) Group 1, Radar Technician Group 1 or Radio Technician Group 1.

APPLICATION

2 The lessons that should be covered and the sections in the instructions or manuals of which a knowledge is required in order to reach each standard are set out opposite the standard concerned.

3 The number of lessons thus indicated bears no relation to the number of periods that may be required to teach the lessons, ie, while some lessons require only one period of instruction to reach the standard required, others may require several periods.

4 The decision as to the number of periods necessary in any subject will be made by the officer directly concerned with the training in that subject.

Army Headquarters,
OTTAWA, Ontario
Sep 55

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

COMMUNICATION SYSTEM TECHNICIAN GROUP 1

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUP 1

RADAR TECHNICIAN GROUP 1

RADIO TECHNICIAN GROUP 1

INDEX

SERIAL	SUBJECT
1	Workshop Practice
2	Fundamentals of Electricity
3	Basic Electronic Concepts and Circuits
4	Basic Electronic Systems
5	Advanced Electronic Concepts and Circuits

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

COMMUNICATION SYSTEM TECHNICIAN GROUP 1

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUP 1

RADAR TECHNICIAN GROUP 1

RADIO TECHNICIAL GROUP 1

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
1	Workshop Practice		Philco Standardized Training for the Armed Forces: A - Instructor's Manual for Basic Electronics, Circuits and Systems - Lab Plans B - Manual for Shop Practice
		Must know safety precautions for first aid and shock.	A - pages i - iii
		Must be able to:	
		(a) use the tools special to radio repair;	A - 1 A - 2 pt 1
		(b) use portable power tools;	B - 1 and 2 B - 3 expt 1
		(c) fabricate simple sheet metal chassis;	A - 3
		(d) solder, splice, terminate and cable all types of conductors used in radio construction;	A - 5, 6 and 7 B - 6 expt 4, 7 and 8 expt 6
		(e) interpret simple mechanical drawings.	B - 6 expt 4, and 8 expt 6
2	Fundamentals of Electricity		Philco Standardized Training for the Armed Forces: A - Fundamentals of Electricity - Lesson Plans B - Fundamentals of Electricity - Lab Plans
		Must know:	
		(a) electron theory;	A - 1 Films: MN 1540-T TF 11-622
		(b) electrostatics;	A - 2 Films: SS 733 Jam Handy No. 2
		(c) electrical units,	A - 3
		(d) electromotive force and secondary battery servicing;	A - 4 Films: TF 11-1187 Pt 3 SS 366 Jam Handy Nos. 4 and 5

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

COMMUNICATION SYSTEM TECHNICIAN GROUP 1

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUP 1

RADAR TECHNICIAN GROUP 1

RADIO TECHNICIAN GROUP 1

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
		(e) Ohm's law,	A - 6 and 7 Film: MN 1540-U
		(f) Kirchoff's laws,	A - 8
		(g) calculation of power and energy;	A - 9
		(h) laws of magnetism;	A - 10, 11 and 12 Jam Handy Nos. 1 and 3 TM 11-661
		(j) induced EMF in electrical machines and the relationship of magnetism and EMF;	A - 13 B - 4
		(k) principles of alternating current and voltage;	A - 14 Jam Handy No. 8 TM 11-681
		(l) capacitance and capacitive reactance;	A - 15
		(m) inductance and inductive reactance;	A - 16
		(n) AC analysis of series, parallel, and series-parallel circuits;	A - 17, 18 and 19
		(o) construction and use of meters	A - 20
		Must be given practice in:	
		(a) use and operation of meters;	
		(b) use of ohmmeter in calculation of series and parallel circuits;	B - 2
		(c) analysis of AC circuits;	B - 5, 6 and 7
		(d) use and operation of VTVM.	B - 8
3	Basic Electronic Concepts and Circuits		Philco Standardized Training for the Armed Forces: A - Basic Electronics concepts and Circuits - Lesson Plans B - Basic Electronic Concepts and Circuits - Lab Plans

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

COMMUNICATION SYSTEM TECHNICIAN GROUP 1

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUP 1

RADAR TECHNICIAN GROUP 1

RADIO TECHNICIAN GROUP 1

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
		Must be able to:	C - EME Manual
		(a) identify radio components;	B - 1
		(b) assemble and replace radio components in a typical radio;	C - Elec E 509 Instn 2
		(c) operate tube testers.	A - 13 Film: MN 1540-P
		Must know:	
		(a) function, construction and coding of fixed and variable resistors;	A - 1
		(b) function, construction and coding of capacitors and inductors;	A - 2
		(c) function and application of transformers;	A - 3 B - 2
		(d) basic principles of resonance;	A - 4
		(e) function and use of series and parallel resonant circuits;	B - 3 and 4
		(f) basic functions of vacuum tubes;	A - 5, 6, 7, 8, 9, 10 and 11
		(g) characteristic curves of:	B - 5, 6, 7, 9 and 10
		(i) diodes (ii) triodes (iii) tetrodes (iv) pentodes (v) sharp cut-off pentodes,	
		(h) principles of cathode-ray tubes;	A - 12 Film: MN 2104-A
		(j) operation of a basic cathode ray oscilloscope;	B - 11 Films MN 2104-B
		(k) function, operation and testing of half and full wave power supplies;	A - 14 and 15 B - 13 C - Elec E 509 Instn 2

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

COMMUNICATION SYSTEM TECHNICIAN GROUP 1

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUP 1

RADAR TECHNICIAN GROUP 1

RADIO TECHNICIAN GROUP 1

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
		(l) function and use of typical:	
		(i) impedance coupled voltage amplifiers,	A - 16 B
		(ii) resistance coupled voltage amplifiers,	B - 14
		(iii) transformer coupled voltage amplifiers;	A - 16 C B - 15
		(m) functions and use of typical single and double ended power amplifiers;	A - 17 B - 16 B - 18
		(n) operation of phase inverters;	A - 18 B - 17
		(o) operation of typical electronic oscillators;	A - 19 B - 19
		(p) propogation and transmission of sound and electrical waves;	A - 20, 21, 22 and 23
		(q) principles of crystal receivers and vacuum tube detectors;	A - 24 and 25 B - 20 C - Elec E 509 Instn 2
		(r) principles of RF amplifiers;	A - 26
		(s) basic construction and function of microphones and loud-speakers;	A - 27
		(t) function of automatic volume control.	A - 28
4	Basic Electronic Systems		Philco Standardized Training for the Armed Forces: A - Basic Electronic Systems - Lesson Plans B - Basic Electronic Systems - Lab Plans C - EME Manual
		Must be able to:	
		(a) find faults in an repair tuned radio frequency receivers;	A - 1 and 6 B - 1

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

COMMUNICATION SYSTEM TECHNICIAN GROUP 1

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUP 1

RADAR TECHNICIAN GROUP 1

RADIO TECHNICIAN GROUP 1

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
		(b) find faults in and repair superheterodyne receivers;	A - 5 B - 4 and 5 C - Elec E 509 Instn 2
		(c) find faults in and repair simple transmitters;	A - 15 B - 9
		(d) tune and align AM transmitters	A - 14
		Must know:	
		(a) operation and function of frequency converters;	A - 4 B - 3 C - Elec E 509 Instn 2
		(b) operation and function of IF amplifiers;	A - 3 B - 2 C - Elec E 509 Instn 2
		(c) basic procedure for superheterodyne alignment,	A - 5 B - 4 C - Elec E 509 Instn 2
		(d) principles of RF oscillators;	A - 8
		(e) operation and function of RF power amplifers and buffer-doubler amplifier;	A - 9 B - 6 and 7
		(f) principles of transmitter modulation and transmitter keying	A - 10 and 11 B - 8
		(g) characteristics of transmission lines;	A - 12 B - 10
		(h) principles of antennas and electrical radiators;	A - 13
		(j) characteristics of radio interference and the methods of eliminating it.	A - 27 B - 14
5	Advanced Electronic Concepts and Circuits		Philco Standardized Training for the Armed Forces: A - Advanced Electronic Concepts and Circuits - Lesson Plans B - Advanced Electronic Concepts and Circuits - Lab Plans

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

COMMUNICATION SYSTEM TECHNICIAN GROUP 1

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUP 1

RADAR TECHNICIAN GROUP 1

RADIO TECHNICIAN GROUP 1

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
		Must have a knowledge of:	
		(a) characteristics of and the production of non-sinusoidal wave forms;	A - 2, 15, 16, 22, 23 and 25 B - 1, 3, 20, 21, 28 and 30
		(b) phase shifting in electronic circuits;	A - 3 B - 2
		(c) concepts of feedback and its application to amplifiers and oscillators;	A - 4
		(d) operation of cathode followers;	A - 26 B - 5 and 31
		(e) operation of limiters;	A - 9 and 10 B - 12 and 13
		(f) operation of function of electromagnetic cathode tubes.	A - 31
		Must know:	
		(a) RC oscillators;	A - 5 B - 4
		(b) principles of electronic integration and differentiation;	A - 6, 7 and 8 B - 8 and 9
		(c) operation, construction and limitations of cathode ray oscilloscopes.	A - 27, 28, 29 and 30 B - 33 and 34

Communication System Artificer Group 4, 1955

1200-T3 VOL. 4

DEPARTMENT OF NATIONAL DEFENCE

ARMY TRADES COMMITTEE

FOR CROSS REFERENCES SEE INSIDE COVER

ROUTING				P.A. AND S.P. ENTRIES				REGISTRY ONLY	
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	as requested	7/21/57							
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ARMY HEADQUARTERS

HQ 1200-T3 (MT 2)

OTTAWA, 18 Jan 55

The 141st Meeting of the Army Trades Committee
will be held
in Room 3517, "A" Bldg., National Defence Headquarters, on
Friday, 21 Jan 55 at 0900 hours.

(R.A. Keane)
Colonel
Chairman
Army Trades Committee

DISTRIBUTION

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For Information

ACS

ACENDA

SUBJECT

Senior Instructor Infantry Group 3
Sponsor D Inf

Introduction of a submission for the deletion of the specialty of Senior Instructor Infantry Group 3. This submission is made on the basis that the functions of this specialty are now carried out by one of the following:

(a) Leading Infantryman Group 3

(b) Infantry Anti-Tank Gunner Group 3

(c) Infantry Mortarman Group 3

(d) Infantry Machine Gunner Group 3

(e) Infantry Pioneer Group 3.

Existing specialists will be retrained, where necessary, and are remustered to one of the above specialties.

2. Communication System Technician Groups 1, 2 and 3
Sponsor DFME

Introduction of the re-written specification for the trade of Telecommunication Mechanic (L of C) Groups 1, 2 and 3. It differs from the former specification as follows:

(a) The name has been changed to more accurately reflect the duties of the trade;

(b) A knowledge of microwave communication links is required;

(c) Installation of equipment is no longer required;

(d) Progression will be to either Communication System Artificer Group 4 (see Item 3) or Radio Artificer Group 4.

The proposed specification is at Appendix "A".

3. Communication System Artificer Group 4
Sponsor DFME

Introduction of the proposed specification for the new trade of Communication System Artificer Group 4. This trade is a progression from the Communication System Technician Group 3 and includes the skills and knowledge required of an artificer in this field. The artificer is required due to the variety and complexity of modern signals communication equipments used in fixed or semi-static installations.

The proposed specification is at Appendix "B".

SPECIFICATION FOR ARMY TRADES AND SPECIALTIES

COMMUNICATION SYSTEM ARTIFICER GROUP 4

CLASSIFICATION

2.1 Full Title

	Code Number
Communication System Artificer Group 4	2164

SUMMARY

2.1 ~~Finds faults in,~~ Repairs, tests, adjusts and inspects all signals communication equipment used in fixed or semi-static installations under instruction. Supervises and organizes the work of junior tradesmen in his section.

3. DUTIES AND TASKS

3.1 Trade Duties

.1 Organizes and directs the repair, modification and preservation of radio receivers and transmitters of over 300 watt output, carrier telephone equipment and telephone exchanges, teletypewriters and other telegraph equipment.

.2 Carries out specification testing and inspection of all equipments applicable to the trade.

.3 Finds faults which are beyond the knowledge and experience of the technicians in his section.

.4 Assists in planning section work loads, keeps records, and completes pertinent accounting documents.

.5 Plans shop lay-out and production lines, taking into account such factors as personnel, lighting, power sources, test equipment and work space.

.6 Recommends equipment repair or condemnation, taking into consideration the type of repairs required, their cost, and the availability of parts, labour and repair facilities.

.7 Inspects unit equipments, assigns condition classifications and maintenance gradings, and advises units on their maintenance and storage problems.

.8 Advises on technical matters concerning equipments of the trade.

.9 Repairs and calibrates test equipment applicable to the trade.

.10 Devises test methods, and designs jigs, fixtures and test panels to aid in the repair, overhaul and modification of equipments.

.11 Assists in determining the requirements for spare parts.

.12 Uses approved technical manuals and text books and interprets technical information.

.13 Trains junior tradesmen in the performance of their duties and assesses their ability.

COMMUNICATION SYSTEM ARTIFICER GROUP 4

Regimental Duties

4.1 See Part II of the manual, Detailed Instructions Relating to Trades and Specialties, paragraph 8 (to be published at a later date).

TRAINING, EXPERIENCE, SKILLS AND KNOWLEDGE REQUIRED

4.1 The skills and knowledge required by personnel employed at this trade are outlined under functional headings.

4.2 The Communication System Artificer Group 4 requires a knowledge of, and training and experience in, the following functions to enable him to perform his duties under minimum supervision:

Serial	Function
1	**Technical Administration**
	.1 Writing technical reports and instructions.
	.2 Estimating and costing.
	.3 Preparing spare parts scales.
	.4 Modification and design change procedures.
	.5 Section accounting procedures.
	.6 Inspection procedures.
	.7 Responsibilities of an inspection team.
	.8 Technical publications.
	.9 Appreciation of the scope of RCEME and other corps trades.
2	**Fault Finding and Repairing**
	.1 RCEME repair policy.
	.2 Advanced electronic concepts and circuits.
	.3 Advanced electronic systems.
	.4 Mechanical systems and repairs.
	.5 Detailed circuit analysis.
	.6 Overhaul and repair procedures.
	.7 Field repairs to test equipment.
	.8 Fixed and semi-static wireless installation layouts.
	.9 Workshop layout.
	.10 Production line methods.
3	**Performance Testing**
	.1 Methods of testing to determine efficiency of operation.
	.2 Testing, adjusting and calibrating test equipment.
	.3 Specification testing.

5. RESPONSIBILITY

5.1 A Communication Systems Artificer is responsible, under minimum supervision, for testing, adjusting, repairing and inspecting radio receivers and transmitters of over 300 watt output, carrier telephone equipment and telephone exchanges, teletypewriters and other telegraph equipment, and for the training and supervision of the tradesmen in his section.

6. WORKING CONDITIONS

6.1 Duties are normally performed ~~inside.~~ under cover.

6.2 Hazards include exposure to electrical shocks and burns.

COMMUNICATION SYSTEM ARTIFICER GROUP 4

METHOD OF QUALIFICATION

7.1 Qualification for Group 4

.1 In order to qualify as a Communication System Artificer Group 4, the candidate must:

.1 Be qualified as a Communication System Technician Group 3; and

.2 Have ~~passed~~ qualified as a RCEME Senior NCO ~~course~~, and

.3 Have ~~passed the~~ pre-artificer assessment authorized by Army Headquarters.

.2 Qualification may then be obtained by passing a course authorized by Army Headquarters.

.3 The scope of the course will include the functions listed in paragraph 4.2.

8. CAREER POSSIBILITIES

8.1 This trade does not progress to any other trade or specialty.

8.2 Advancement in rank is governed by regulations laid down by the Adjutant-General.

9. RELATED OCCUPATIONS

9.1 Navy - Communicator (Supplementary) Group 4
Radio Technician Group 4

9.2 Air Force - None

	Dictionary of Occupational Titles Code Number
9.3 Civilian - Central-Office Repairman, Supervising (tel & tel)	5-53.235
Private-Branch-Exchange-Repairman Supervisor	5-95.220
Foreman (tel & tel)	5-95.220

Effective Date:

ARMY HEADQUARTERS

HQ 1200-T3 (HT 2)
OTTAWA, 24 Jan 55

Minutes - 144st Meeting
Army Trades Committee

1. Herewith minutes of the 144st meeting of the Army Trades Committee held in Room 3517, "A" Bldg., National Defence Headquarters, on Friday, 21 Jan 55, at 0900 hrs.

The following attended:

Chairman	-	Lt-Col R.L. Rutherford	DMT
Members	-	Lt-Col L.P.P. Payan	DSD
		Lt-Col W. De N. Watson	DQOP
		Capt N.C. Malloch	D Org
Sponsors	-	Lt-Col N.E.P. Carneau	D Inf
		Major J.L. Sloan	DEME
Secretary	-	Major S.A. Miel	DMT

Attention is directed to the agenda issued under cover of HQ 1200-T3 (HT 2) dated 18 Jan 55.

ITEM	SUBJECT	ACTION
144.1	Senior Instructor Infantry Group 3 Sponsor D Inf	DMT D Org

Consideration was given to the submission for deletion of Senior Instructor Infantry from the list of trades and specialties authorized for the Army.

The members agreed that, as the functions of the Senior Instructor Infantry Group 3 are carried out by new group 3 Infantry specialists, the requirement for the former has ceased to exist. Deletion was approved.

144.2	Communication System Technician Groups 1, 2 and 3 Sponsor DEME	D Org

Consideration was given to the rewritten specification for the trade of Telecommunication Mechanic (L of C) Groups 1, 2, and 3.

Paragraph 2.1 was amended to read:

"Inspects, repairs, tests and adjusts radio receivers and high-powered transmitters, carrier telephone equipment and telephone exchanges, teletypewriters and other telegraph equipment and performs fault-finding drills."

..... 2

Subject to the above and other minor amendments, the specification was approved for submission to the Inter-Service Trades Committee (ISTC).

Communication System Artificer Group 4
Sponsor DENE

D Org

Consideration was given to the proposed specification for the new trade of Communication System Artificer Group 4.

The sponsor explained that the trade is required because of the variety and complexity of new signals communication equipments which have been introduced in this field.

Subject to amendment of paragraph 2.1 and other minor amendments, the specification was approved for submission to the ISTC.

(R.L. Rutherford) Lt-Col
A/Chairman
Army Trades Committee

DISTRIBUTION

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For Information

ACS

Communication System Technician
Groups 1 & 2 & 3, 1955

'UMBER

ARMY HEADQUARTERS

HQ 1200-T3 (MT 2)

OTTAWA, 18 Jan 55

The 141st Meeting of the Army Trades Committee
will be held
in Room 3517, "A" Bldg., National Defence Headquarters, on
Friday, 21 Jan 55 at 0900 hours.

(R.A. Keane)
Colonel
Chairman
Army Trades Committee

DISTRIBUTION

Members

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For Information

ACS

AGENDA

SUBJECT

Senior Instructor Infantry Group 3
Sponsor D Inf

Introduction of a submission for the deletion of the specialty of Senior Instructor Infantry Group 3. This submission is made on the basis that the functions of this specialty are now carried out by one of the following:

(a) Leading Infantryman Group 3

(b) Infantry Anti-Tank Gunner Group 3

(c) Infantry Mortarman Group 3

(d) Infantry Machine Gunner Group 3

(e) Infantry Pioneer Group 3.

Existing specialists will be retrained, where necessary, and are remustered to one of the above specialties.

2. Communication System Technician Groups 1, 2 and 3
Sponsor DEME

Introduction of the re-written specification for the trade of Telecommunication Mechanic (L of C) Groups 1, 2 and 3. It differs from the former specification as follows:

Approved I&TC

(a) The name has been changed to more accurately reflect the duties of the trade;

(b) A knowledge of microwave communication links is required;

(c) Installation of equipment is no longer required;

(d) Progression will be to either Communication System Artificer Group 4 (see Item 3) or Radio Artificer Group 4.

The proposed specification is at Appendix "A".

3. Communication System Artificer Group 4
Sponsor DEME

Approved I&TC

Introduction of the proposed specification for the new trade of Communication System Artificer Group 4. This trade is a progression from the Communication System Technician Group 3 and includes the skills and knowledge required of an artificer in this field. The artificer is required due to the variety and complexity of modern signals communication equipments used in fixed or semi-static installations.

The proposed specification is at Appendix "B".

SPECIFICATION FOR ARMY TRADES AND SPECIALTIES

COMMUNICATION SYSTEM TECHNICIAN GROUPS 1, 2 AND 3

1. CLASSIFICATION

1.1 Full Title

		Code Number
Communication System	Technician Group 1	7581
Communication System	Technician Group 2	7582
Communication System	Technician Group 3	7583

2. SUMMARY

2.1 ~~Finds faults in,~~ Inspects, repairs, tests and adjusts radio receivers and high-powered transmitters, carrier telephone equipment and telephone exchanges, teletypewriters and other telegraph equipment *and performs fault finding drills.*

3. DUTIES AND TASKS

3.1 Trade Duties

.1 Finds faults in, repairs, tests and adjusts radio receivers and transmitters of over 300 watt output using instruments such as multimeters, signal generators and tube testers.

.2 Finds faults in, repairs, tests and adjusts static telephone equipment such as switchboards, carrier and selective carrier telephones, repeaters and remote control gear.

.3 Finds faults in, repairs, tests and adjusts telegraph equipment such as teletypewriters, teletype switchboards, frequency shift and voice frequency telegraph equipments.

.4 Replaces faulty electrical and electronic components such as tubes, condensers, transformers and filters.

.5 Replaces and repairs mechanical components and assemblies.

.6 Carries out alignment and specification tests by checking calibration, sensitivity, band width and selectivity, and performing other specified tests.

.7 Finds faults in signals communication equipment used in fixed or semi-static installations.

.8 Splices, solders, insulates, and terminates all types of cables and connectors.

.9 Performs operational tests on telegraph and telephone equipment, high-powered radio transmitters and receivers, and their associated equipments.

.10 Carries out minor repairs to test equipment and checks its calibration.

.11 Traces circuits, makes circuit diagrams and prepares simple mechanical sketches.

.12 Refers to ~~publications~~ *appropriate tech manuals + trade handbooks* to obtain technical information.

.13 Serves as a member of a team inspecting units equipments.

COMMUNICATION SYSTEM TECHNICIAN GROUPS 1, 2 AND 3

.14 Completes section accounting documents.

.15 Instructs junior tradesmen in the performance of their duties.

3.2 Regimental Duties

.1 See Part II of the manual, Detailed Instructions Relating to Trades and Specialties, paragraph 8 (to be published at a later date).

4. TRAINING, EXPERIENCE, SKILLS AND KNOWLEDGE REQUIRED

4.1 The skills and knowledge required by personnel employed at this trade are outlined, by groups, under functional headings.

GROUP 1

Group 1

4.2 The Communication System Technician / requires a knowledge of, and training and experience in, the following functions to enable him to perform his duties under direct supervision:

Serial	Function
1	**Workshop Practice**
	.1 Safety precautions.
	.2 First aid for electric shock and burns.
	.3 Care and use of hand tools.
	.4 Interpreting circuit and wiring diagrams and simple blueprints.
	.5 Chassis work and parts mounting.
	.6 Soldering techniques.
	.7 Wiring techniques.
2	**Fault Finding**
	.1 Fundamentals of electricity.
	.2 ~~Electronic concepts and circuits.~~ Fundamentals of electronics ✓
	.3 Electronic systems.
	.4 Principles of fault finding.
3	**Servicing**
	.1 Secondary portable batteries.
4	**Testing and Adjusting**
	.1 Care and use of test equipment.
	.2 Electrical and electronic components.

GROUP 2

4.3 In addition to the requirements for group 1, a group 2 tradesman must have a knowledge of, and training and experience in, the following functions to enable him to perform his duties under general supervision:

Serial	Function
2	**Fault Finding**
	.5 Circuitry.
	.6 Setting up procedures.

COMMUNICATION SYSTEM TECHNICIAN GROUPS 1, 2 AND 3

Serial	Function
	.7 Techniques for:
	.1 Telephones.
	.2 Telephone exchanges.
	.3 Ringers.
	.4 Central office carrier telephone apparatus.
	.5 Carrier telephone repeaters.
	.6 Teletype equipment.
	.7 Central office telegraph equipment.
	.8 Telegraph repeaters.
	.9 Relays.
	.10 Frequency shift equipment.
	.11 Radio teletype controls.
	.12 AM radio transmitters of over 300 watt.
	.13 AM radio receivers.
	.14 Test equipment.
	.8 Theory of automatic frequency control apparatus.
	.9 Principals of microwave communication links.
3	Servicing
	.2 Electric motors.
	.3 Preservation and de-preservation procedures.
	.4 Maintenance procedures.
	.5 Test equipment.
4	Testing and Adjusting
	.3 Test equipment.
	.4 Function of a screened test cage.
	.5 Alignment procedures.
5	Repairing
	.1 Replacing and repairing components and assemblies.
	.2 Rewiring.
	.3 Locating technical information.
6	Administration
	.1 Section accounting procedures.

GROUP 3

4.4 In addition to the requirements for group 2, a group 3 tradesman requires proficiency in the following functions to enable him to perform his duties under minimum supervision:

Serial	Function
2	Fault Finding
	.10 AM radio transmitters of over 300 watt.
	.11 AM radio receivers.
	.12 Telephones and associated equipment.
	.13 Telephone exchanges and associated equipment.
	.14 Teletype.
	.15 Telegraph and associated equipment.
	.16 Test equipment.

COMMUNICATION SYSTEM TECHNICIAN GROUPS 1, 2 AND 3

Serial	Function
4	**Testing and Adjusting**
	.6 Operational testing.
	.7 Aligning.
	.8 Specification testing.
5	**Repairing**
	.4 Electrical and electronic components and assemblies.
	.5 Fitting and setting up mechanical components and assemblies.
6	**Administration**
	.2 Inspection forms and procedures.

5. RESPONSIBILITY

5.1 A Communication System Technician Group 3 is responsible, under minimum supervision, for inspecting, repairing, testing and adjusting radio receivers and high-powered transmitters, telephones, telephone exchanges, teletype and telegraph equipment.

6. WORKING CONDITIONS

6.1 Duties are normally performed inside.

6.2 Hazards include exposure to electrical shocks and burns.

7. METHOD OF QUALIFICATION

7.1 Qualification for Group 1

.1 Qualification may be obtained by one of the following methods:

.1 Passing a course authorized by Army Headquarters; or

.2 Passing a trade test when authorized by Army Headquarters.

.2 The scope of the course or trade test will include the functions listed in paragraph 4.2.

7.2 Qualification for Group 2

.1 In order to qualify as a Communication System Technician Group 2, the candidate must be qualified as a Communication System Technician Group 1.

.2 Qualification may then be obtained by one of the following methods:

.1 Passing a course authorized by Army Headquarters; or

.2 Passing a trade test when authorized by Army Headquarters.

.3 The scope of the course or trade test will include the functions listed in paragraph 4.3.

COMMUNICATION SYSTEM TECHNICIAN GROUPS 1, 2 AND 3

7.3 Qualification for Group 3

.1 In order to quality as a Communication System Technician Group 3, the candidate must be qualified as a Communication System Technician Group 2.

.2 Qualification may then be obtained by passing a trade test authorized by Army Headquarters after having been certified proficient in the functions listed in paragraph 4.4. This certification will be made by his commanding officer with assessment by the appropriate RCEME representative in the command, area or formation concerned, where the commanding officer is not a member of that Corps.

.3 The scope of the trade test will include the functions listed in paragraph 4.4.

8. CAREER POSSIBILITIES

8.1 A Communication System Technician Group 3 may progress to Communication System Artificer or Radio Artificer.

8.2 Advancement in rank is governed by regulations laid down by the Adjutant-General.

9. RELATED OCCUPATIONS

9.1 Navy - Radio Technician (Communications)
Radio Technician (Air) Communications
Communicator (Supplementary)

9.2 Air Force - Communications Technician (Ground)
Telegraph Technician

9.3 Civilian -

	Dictionary of Occupational Titles Code Number
Central-Office Repairman (tel & tel)	5-53.235
Private-Branch-Exchange Repairman (tel & tel)	5-53.240
Station Repairman (tel & tel)	5-53.250
Telegraphic-Typewriter Repairman (tel & tel)	5-53.270
Electrician, Radio (any industry)	5-83.445
Electronics Technician	5-83.444
Radio Mechanic	5-83.447
Radio Repairman	5-83.411

Effective Date:

Radio Technician
Groups 2 & 3, 1955

DEPARTMENT OF NATIONAL DEFENCE
ARMY DIVISION

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RADIO TECHNICIAN - QUALIFICATION - POLICY OF TRAINING AND QUALIFICATION

BDF 4-5-1-2 (ME 1B1)

HQ 3675-R12 (ME 1)
HQ 3202-R12

ARMY HEADQUARTERS
OTTAWA, 14 Nov 60

Headquarters
Eastern Command
Ahern Avenue
HALIFAX, N.S.

Training Standards
Radio Technician Groups 1 and 2

1. Reference is made to EASCOM message G 4331 dated 8 Nov 60.

2. There is no training standard for Radio Technician Group 3. Enclosed are four copies each of the training standards for Radio Technician Groups 1 and 2.

3. Trade specification Radio Technician Groups 1, 2 and 3 dated 6 Dec 54 published in (old binder) Army Trade Specifications may be of some assistance.

JON/4-5412/ew

(R.W. Moncel)
Major-General
Quartermaster-General

Encl 8

TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

RADIO TECHNICIAN GROUP 2

AIM

1. To ensure that candidates are capable of carrying out the duties of a Radio Technician Group 2.

APPLICATION

2. The lessons that should be covered and the sections in the instructions or manuals of which a knowledge is required in order to reach each standard, are set out opposite the standard concerned.

3. The number of lessons thus indicated bears no relation to the number of periods which may be required to teach the lessons, ie, while some lessons require only one period of instruction to reach the standard required, others may require several periods.

4. The decision as to the number of periods necessary in any subject will be made by the officer directly concerned with the training in that subject.

Army Headquarters,
OTTAWA, Ontario.
SEP 55.

TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

RADIO TECHNICIAN GROUP 2

INDEX

SERIAL	SUBJECT	PAGE
1	Frequency Modulation Equipment	3
2	Circuits of Current Equipments	3
3	Equipment Setting-up Procedures	4
4	Servicing Procedures	4
5	Fault Finding Current Equipments	5
6	Repair Methods	5
7	Administration	6

TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

RADIO TECHNICIAN GROUP 2

.IAL (a)	SUBJECT (b)	STANDARD (c)	REFERENCES (d)
			Philco Standardized Training for Armed Forces - Basic Electronic Systems (Instructor's Manual) A - Lesson Plans B - Laboratory and Experiment Plans
1	Frequency Modulation Equipment	Must know:	
		(a) FM principles;	A - LP 16
		(b) principles of operation of FM transmitters;	A - LP 17
		(c) FM antennas;	A - LP 18
		(d) how to align and service an FM transmitter;	B - LP 11
		(e) FM receiver fundamentals;	A - LP 19
		(f) limiters, discriminators, and detection;	A - LP 20
		(g) ratio detectors;	A - LP 21
		(h) how to align and service an FM receiver;	B - LP 12
		(j) noise limiting and suppression.	A - LP 24
2	Circuits of Current Equipments	Must know the detailed theory of operation and be familiar with the circuitry of the following equipments:	EME Manual Elec
		(a) Wireless Set Canadian No 19 Mk 3;	F 252/3
		(b) Radio Set CPRC-26 (A to F);	I 162
		(c) Wireless Set Canadian No 52;	F 522
		(d) Wireless Sender No 53;	D 372
		(e) Telephone Set 'F' Mk 1 and 'F' Mk 1* Canadian;	T 122
		(f) Radio Set AN/PRC 510;	I 232
		(g) Reception Sets R 209;	E 842

TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

RADIO TECHNICIAN GROUP 2

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
		(h) Switchboard UC, 10-line and 6-line Mk 2 Canadian;	T 392
		(j) Detector Mine No 4A;	B 342
		(k) Electronic portion of Projectors, Sound, Film, Bell and Howell Design 156 Utility.	C 512
		Must have a knowledge of the theory of operation and the circuitry of the following:	
		(a) Transmitter Canadian No 33;	D 262
		(b) Wireless Set Canadian No 29	F 352
		(c) Wireless Set Canadian No 58 Mk 1A /T;	F 702/2
		(d) Reception Sets Canadian AR 88LF and CR9/A;	E 762
		(e) Electronic portion of Projectors, Sound, Film, 16mm, Ampro, Model 40;	Manufacturer's Handbook
		(f) Public Address Set AN/T1Q-2.	TM 11-2586 Sections 1-111, XIV
3	Equipment Setting-up Procedures	Must know how to set up for use each of the equipments listed in Serial 2.	
		Must be able to recognize the presence of serious faults which become apparent through carrying out setting up procedures.	
4	Servicing Procedures	Must have a knowledge of and be capable of carrying out:	
		(a) preventive maintenance procedures for all equipments listed in Serial 2;	
		(b) storage of electronic equipment	EME Manual Elec A 871
		(c) unit maintenance and repair of test equipment including replacement of batteries, tubes and fuses.	Manufacturers pamphlets and EME Manual.

TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

RADIO TECHNICIAN GROUP 2

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
		Must be able to clean contacts and adjust relays.	EME Manual Elec A 767
		Must know the purpose and function of screened test cages.	
		Must have a knowledge of and be given limited practice in the alignment of:	
		(a) Wireless Set Canadian No 19 Mk 3;	EME Manual Elec F 254/3 para 110-113, 123-127, 144-152
		(b) Radio Set CPRC-26 (A to F);	EME Manual Elec I 163 Instr 1 para 9
		(c) Wireless Set Canadian AN/PRC 510;	EME Manual Elec I 233
		(d) Wireless Set Canadian No 52;	EME Manual Elec F 524 para 5-7, 9-11, 14-15.
		(e) Wireless Sendar No 53.	EME Manual Elec D 374
		Must have a knowledge of the difficulties associated with alignment of the Reception Sets Canadian AR-88LF (and CR91A) and R 209	EME Manual Elec E 764 para 9-28 and Elec E 844
5	Fault Finding Current Equipments	Must be given practice in the location of faults on the following equipments:	
		(a) Wireless Set Canadian No 19 Mk 3;	
		(b) Radio Set CPRC-26;	
		(c) Wireless Set Canadian No 52;	
		(d) Wireless Sender No 53;	
		(e) Radio Set AN/PRC 510;	
		(f) Switchboard UC 10 line.	

TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

RADIO TECHNICIAN GROUP 2

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
6	Repair Methods	Must be able to replace components and assemblies such as resistors, capacitors, inductors, transformers, switches, plugs and sockets. Must be capable of: (a) carrying out minor repairs to damaged assemblies; (b) re-arranging or replacing original wiring; (c) carrying out repairs to dynamotors of wireless sets with emphasis on bearings commutator condition and fitting of brushes. (d) locating desired technical information.	Philco Training Manual on Electrical Power Equipment (Generators and Motors) pages 42-65, 116-119.
7	Administration	Must have a knowledge of the functioning of a RCEME workshop, and the use of the following forms:	EME Manual - Static Operations
		(a) CAFC 2149 (Request for Repair Services);	K 010, K011
		(b) CAFC 2300 (Request for Repair Services Register);	K 013
		(c) CAFC 2070 (Workshop Order and Spare Parts Issue Voucher);	K 014
		(d) CAFC 2267 (Inter Shop Card);	K 016
		(e) CAFB 1706 (Individual Daily Time Card);	K 030
		(f) CAFC 2301 (Section Work Register).	K 017

DECLASSIFIED BY DIRECTION OF CHAIRMAN
PUBLIC ARCHIVES
DEC 1982

HQ 3202-R12 (MS 1)

PA

In reply to
HQ 3667-1 (A)
dated 13 Apr 56

ARMY HEADQUARTERS,
OTTAWA, 7 May 56

Headquarters,
Prairie Command,
WINNIPEG, Manitoba.

Upgrading of Personnel
Radio Technician Group 3

1. According to the trade specification for radio technician, qualification for group 3 is obtained by passing a trade test authorized by Army Headquarters after having been certified proficient in the functions listed in paragraph 4.4 of the specification.

2. No group 3 courses are scheduled to be conducted at The RCEME School during the 1956-57 course year. Therefore training for upgrading must be carried out locally.

3. The electronic equipment referred to in paragraph 4.4 of the trade specification may be interpreted to be: 19 set, 58 set, CPRC 26 or 510, a receiver AR88, AR91A or HRO, telephone, switchboard, a PA system, mine detector, an amplifier of a projector, and a transmitter such as 43, 33 or even 52 set.

4. If all items of equipment are not immediately available to 12 Coy RCEME Wksp, arrangements should be made to borrow necessary equipment from elsewhere in the command. This Headquarters should be advised of items not available in the command and arrangements will be made for a loan issue from other sources.

K Richard Lt Col

ALM/4-5083/ew

(JR Dunlop)
Colonel
Director of Electrical and Mechanical Engineering

1 T39

IN REPLY PLEASE QUOTE
NO. PC/3667-1 (A)
SH 61326

Department of National Defence
Army

OA

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Winnipeg, Manitoba 19

13 Apr 56

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(1)

Army Headquarters
Department of National Defence
OTTAWA Ont

Upgrading of Personnel
Radio Technician Gp 3 - RCEME

1 The problem of upgrading personnel on strength of 12 Coy RCEME in the trade of Radio Technician Gp 3 from Gp 2 has arisen.

2 The present methods of upgrading personnel are as follows:

(a) By a course authorized by AHQ. — check!

(b) Certified as being proficient in the functions listed in para 4.4 of the trade specification then pass a trade test authorized by AHQ.

3 The functions listed in para 4.4 of the trade specification include fault finding on electronic equipments that are not repaired in 12 Coy RCEME Wksp, or available in this area.

4 The Canadian Army Courses Manual states that personnel who have attended a Gp 2 course are not eligible for the Gp 3 course.

5 In that personnel cannot be upgraded by trade test in accordance with para 2 (b) above, it is suggested that personnel who have had a Gp 2 course should now be considered for a Gp 3 course.

6 A case in particular is SH 61326 L/Cpl ANNESTY, G W, 12 Coy RCEME, who completed the Gp 2 Course on 8 Sep 54 and is now recommended for an early Gp 3 course.

(2) ADEME (elec)
1. Item comments, pls, and
Memorandum thereon
to ADEME (P+T)

19 April 56.

(W J Megill) Major General
General Officer Commanding
Prairie Command

C.A.F.A. 239
10M—5-54 (M-7634-37)
4554-A-239

1 Copy of 23-01-1076/12
" " SH 61326

3202-R12.

MEMORANDUM

HQ ~~3202-J10/2~~ (MT 2)
7 Sep 55

P.A.

DEPS

Training Standard
Radio Technician Group 2

1. Reference is made to HQ 3202-J10/2 (ME 1) dated 2 Sep 55.

2. The standard has been reviewed. Comments are as follows:

(a) FM Equipment serial 1, is a group 3 function;

(b) Inspection, serial 7(b), is a group 3 function;

(c) Minor corrections to the format are in red ink.

3. The training standard must include only those functions detailed for the particular group in the trade specification. Subject to the corrections on the attached copy, the standard is approved for reproduction.

(R.A. Keane)
Colonel
DMT

Encl.

LDM/4388/pr

~~HQ 3675-R12 (MR 1)~~
HQ 3202-R12

ARMY HEADQUARTERS
OTTAWA, 14 Nov 60

Headquarters
Eastern Command
Ahern Avenue
HALIFAX, N.S.

Training Standards
Radio Technician Groups 1 and 2

1. Reference is made to EASCOM message G 4331 dated 8 Nov 60.

2. There is no training standard for Radio Technician Group 3. Enclosed are four copies each of the training standards for Radio Technician Groups 1 and 2.

3. Trade specification Radio Technician Groups 1, 2 and 3 dated 6 Dec 54 published in (old binder) Army Trade Specifications may be of some assistance.

(RW Moncel)
Major-General
Quartermaster-General

Encl 8

Army Headquarters.

Radio Technician
Group 2, 1955

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

RADIO TECHNICIAN GROUP 2

AIM

1. To ensure that candidates are capable of carrying out the duties of a Radio Technician Group 2.

APPLICATION

2. The lessons that should be covered and the sections in the instructions or manuals of which a knowledge is required in order to reach each standard, are set out opposite the standard concerned.

3. The number of lessons thus indicated bears no relation to the number of periods which may be required to teach the lessons, ie, while some lessons require only one period of instruction to reach the standard required, others may require several periods.

4. The decision as to the number of periods necessary in any subject will be made by the officer directly concerned with the training in that subject.

Army Headquarters,
OTTAWA, Ontario.
SEP 55.

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

RADIO TECHNICIAN GROUP 2

INDEX

SERIAL	SUBJECT	PAGE
1	Frequency Modulation Equipment	3
2	Circuits of Current Equipments	3
3	Equipment Setting-up Procedures	4
4	Servicing Procedures	4
5	Fault Finding Current Equipments	5
6	Repair Methods	5
7	Administration	6

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

RADIO TECHNICIAN GROUP 2

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
			Philco Standardized Training for Armed Forces - Basic Electronic Systems (Instructor's Manual) A - Lesson Plans B - Laboratory and Experiment Plans
1	Frequency Modulation Equipment	Must know:	
		(a) FM principles;	A - LP 16
		(b) principles of operation of FM transmitters;	A - LP 17
		(c) FM antennas;	A - LP 18
		(d) how to align and service an FM transmitter;	B - LP 11
		(e) FM receiver fundamentals;	A - LP 19
		(f) limiters, discriminators, and detection;	A - LP 20
		(g) ratio detectors;	A - LP 21
		(h) how to align and service an FM receiver;	B - LP 12
		(j) noise limiting and suppression.	A - LP 24
2	Circuits of Current Equipments	Must know the detailed theory of operation and be familiar with the circuitry of the following equipments:	EME Manual Elec
		(a) Wireless Set Canadian No 19 Mk 3;	F 252/3
		(b) Radio Set CPRC-26 (A to F);	I 162
		(c) Wireless Set Canadian No 52;	F 522
		(d) Wireless Sender No 53;	D 372
		(e) Telephone Set 'F' Mk 1 and 'F' Mk 1A Canadian;	T 122
		(f) Radio Set AN/PRC 510;	I 232
		(g) Reception Sets R 209;	E 842

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

RADIO TECHNICIAN GROUP 2

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
		(h) Switchboard UC, 10-line and 6-line Mk 2 Canadian;	T 392
		(j) Detector Mine No 4A;	B 342
		(k) Electronic portion of Projectors, Sound, Film, Bell and Howell Design 156 Utility.	C 512
		Must have a knowledge of the theory of operation and the circuitry of the following:	
		(a) Transmitter Canadian No 33;	D 262
		(b) Wireless Set Canadian No 29	F 352
		(c) Wireless Set Canadian No 58 Mk 1A /T;	F 702/2
		(d) Reception Sets Canadian AR 88LF and CR9/A;	E 762
		(e) Electronic portion of Projectors, Sound, Film, 16mm, Ampro, Model 40;	Manufacturer's Handbook
		(f) Public Address Set AN/TIQ-2.	TM 11-2586 Sections 1-111, XIV
3	Equipment Setting-up Procedures	Must know how to set up for use each of the equipments listed in Serial 2.	
		Must be able to recognize the presence of serious faults which become apparent through carrying out setting up procedures.	
4	Servicing Procedures	Must have a knowledge of and be capable of carrying out:	
		(a) preventive maintenance procedures for all equipments listed in Serial 2;	
		(b) storage of electronic equipment,	EME Manual Elec A 871
		(c) unit maintenance and repair of test equipment including replacement of batteries, tubes and fuses.	Manufacturers pamphlets and EME Manual.

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TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

RADIO TECHNICIAN GROUP 2

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
		Must be able to clean contacts and adjust relays.	EME Manual Elec A 767
		Must know the purpose and function of screened test cages.	
		Must have a knowledge of and be given limited practice in the alignment of:	
		(a) Wireless Set Canadian No 19 Mk 3;	EME Manual Elec F 254/3 para 110-113, 123-127, 144-152
		(b) Radio Set CPRC-26 (A to F);	EME Manual Elec I 163 Instr 1 para 9
		(c) Wireless Set Canadian AN/PRC 510;	EME Manual Elec I 233
		(d) Wireless Set Canadian No 52;	EME Manual Elec F 524 para 5-7, 9-11, 14-15.
		(e) Wireless Sendar No 53.	EME Manual Elec D 374
		Must have a knowledge of the difficulties associated with alignment of the Reception Sets Canadian AR-88LF (and CR91A) and R 209	EME Manual Elec E 764 para 9-28 and Elec E 844
5	Fault Finding Current Equipments	Must be given practice in the location of faults on the following equipments:	
		(a) Wireless Set Canadian No 19 Mk 3;	
		(b) Radio Set CPRC-26;	
		(c) Wireless Set Canadian No 52;	
		(d) Wireless Sender No 53;	
		(e) Radio Set AN/PRC 510;	
		(f) Switchboard UC 10 line.	

TRAINING STANDARD

ROYAL CANADIAN ELECTRICAL AND MECHANICAL ENGINEERS

RADIO TECHNICIAN GROUP 2

SERIAL	SUBJECT	STANDARD	REFERENCES
(a)	(b)	(c)	(d)
6	Repair Methods	Must be able to replace components and assemblies such as resistors, capacitors, inductors, transformers, switches, plugs and sockets.	
		Must be capable of:	
		(a) carrying out minor repairs to damaged assemblies;	
		(b) re-arranging or replacing original wiring;	
		(c) carrying out repairs to dynamotors of wireless sets with emphasis on bearings commutator condition and fitting of brushes;	Philco Training Manual on Electrical Power Equipment (Generators and Motors) pages 42-65, 116-119.
		(d) locating desired technical information.	
7	Administration	Must have a knowledge of the functioning of a RCEME workshop, and the use of the following forms:	EME Manual - Static Operations
		(a) CAFC 2149 (Request for Repair Services);	K 010, K011
		(b) CAFC 2300 (Request for Repair Services Register);	K 013
		(c) CAFC 2070 (Workshop Order and Spare Parts Issue Voucher);	K 014
		(d) CAFC 2267 (Inter Shop Card);	K 016
		(e) CAFB 1706 (Individual Daily Time Card);	K 030
		(f) CAFC 2301 (Section Work Register).	K 017

BDF 4-4-7-10 (ME 1B2)
BDF 4-5-2-3

HQ 3666-R12 (ME 1)
HQ 3340-R12

PA

ARMY HEADQUARTERS
OTTAWA, 15 Feb 61

Commandant
The Royal Canadian Electrical and
Mechanical Engineers School
KINGSTON, Ontario.

Radio Technician Group 2

1. Authority has been granted by DMT under HQ 3666-R12 (MT 2A) dated 10 Feb 61 to cover training in the following equipments for Radio Technicians Group 2:

Equipment	Training Category (see para 2)
Radio Set CPRC-26	A
Radio Set CPRC-509 or 510	A
Radio Set C42	A
Transmitter Cdn No 33	A
Radio Set Cdn No 52	B
Reception Set R 209	B
Reception Set CR 91A	C
Switchboard SB 22/PT	A (This will replace UC 10 line when available.)
Switchboard SB 993/GT	A
Tele Set TA 43/PT	A
Tele "F"	B
Projectors B & H 385 (complete equipment)	B
Mine Detector 4A	A
Power Supply CPP 2	B
Terminal Telephone Equipment TA 5006/U	C
Radiac Meter IM 5003/PD	A
Radiac Computer Indicator	B
Dosimeter Charger Model 561	A
Radiacmeter CDV 700	A
Radiacmeter CDV 710	B
Radiacmeter IM 108/PD	B
Dosimeters IM 5002/PD	A
Dosimeter IM 5006/PD	A
Dosimeter IM 93A	A
Radiac Trainer (Simulator)	B
Public Address Systems (Any available equipment)	B
All standard items of test equipment	

2. Following are the definitions for the training categories:

a. Category A equipments are those which are standard items on wide distribution and on which thorough training both in theory and practical repair is required.

b. Category B equipments are those which are on more limited distribution in the field and on these equipments the instruction on theory and practical can be limited to not more than one half the time that would be spent if the equipment were in category A. Theory need only be taught to block diagram level except for important circuit peculiarities. Repair instruction need cover only the more common procedures.

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c. Category C equipments are those which require only a brief familiarisation treatment including recognition and any points of particular importance.

FFD/4-5412/ew

(RA Campbell)
Colonel
Director of Electrical and Mechanical Engineering